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ABSTRACT

Noting that the use of a postal test for literacy measurement is an innovation, this paper describes the four reading tests used to measure the reading skills of a sample of students starting their studies in the Open University at the foundation course level. The paper also discusses reading skills and their assessment, followed by a rationale for the choice of test materials. The survey instrument is reprinted in the appendix. Contains 19 references. (Author/RS)

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Text & Readers Programme

Technical Report #2

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A postal survey of OU students' reading skills

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A Postal Survey of OU Students' Reading Skills

Abstract

IET's Text and Readers Programme has tested the reading skills of a sample of students starting their studies in the Open University at foundation course level.

The use of a postal test for literacy measurement is an innovation, though the nature of the tests is well established by precedent. It is the first time that large-scale direct measures of a basic skill have been taken of Open University students.

This report describes the tests used in this postal survey. There is a discussion of reading skills and their assessment, followed by the rationale for the choice of test materials. The survey instrument is reprinted in the Appendix.

Introduction

The OU has been operating with great success for 25 years, and routinely collects a wide range of data on students' social, demographic and personal characteristics. We also survey student satisfaction with courses, and their opinions on a range of study facilities. However, until now, almost no data has been collected on the basic skills of our students.

This project set out to collect data on the skill which seems to be most important for our system of learning, the skill of reading. It is generally accepted that for students in higher education to be successful they must have (or rapidly acquire) good quality reading skills. This is particularly important for OU students, since text material is the main part of almost all our courses. Also, there is a wealth of supporting text-based material (readers, set books, study guides, and administrative documents and forms).

When we first considered this project, we knew our students were scattered the length and breadth of the UK (and some abroad). It was impractical to use the usual methods of psychometric testing, where a psychologist administers tests face-to-face with groups or individuals. Instead, we decided to build on our strengths and make use of the Institute's expertise in conducting and analysing postal surveys.

This is the first time that large scale testing of a basic skill has been carried out at the Open University. Also, though the tests themselves are of a well-known type, our use of a postal survey for literacy measurement is original. This survey of reading skills is part of a larger project which we hope will include an estimation of the readability of OU foundation course text materials and of the overall reading workload in the five courses. Results of the reading skill survey will be presented in our next report.

Bernard Scott, Research Fellow

Michael Macdonald-Ross, Reader in Textual Communication.

Assessing reading skills

What are reading skills? Reading is the process of extracting meaning from written text. This involves a complex cluster of skills. Much is known about how these skills are acquired and interact (Farnes 1973; Harri-Augstein, Smith and Thomas 1982; Flood 1984; Beech and Colley 1987; Britton and Glynn 1987; Carver 1990). It is usual to distinguish lower level skills (e.g. letter and word recognition) from higher level skills (e.g. comprehension at the levels of sentence, paragraph and longer passages, the use of different strategies for skimming, scanning and reviewing).

Comprehension at higher levels depends on success at lower levels; looked at this way, reading is very much a bottom-up or data-driven process. But in another way reading is top-down or concept-driven. Individual words are understood in the context of individual sentences; sentences are understood in the context of other sentences; whole passages are understood in the context of the reader's world knowledge and assumptions about the writer's purposes.

Table 1 is a brief summary of the main factors affecting the comprehension of text.

Table 1 Factors affecting the comprehension of text:

Reader-based factors:

Cognitive: reading and study skills, metacognition, vocabulary, general knowledge, specific knowledge of subject domain and the writer's intent.
Motivational: purposes, level of interest.

Text-based factors:

Syntactic complexity, semantic complexity, coherence (local and global), rhetorical style, legibility of type.

How are reading skills measured? The lower level skills of letter and word recognition can be isolated and tested in a variety of ways. As long as we can assume basic literacy, our concern as a university is with the higher level skills involved in comprehension. Table 2 summaries the main ways in which reading comprehension skills are assessed. For reasons described below, we have chosen to use the cloze procedure, together with a test that gives an estimate of size of vocabulary.

Table 2 How to assess reading comprehension skills:

Read passage and identify deliberate errors.

Read passage and answer multiple choice questions.

Read passage and answer open ended questions.

Read passage and complete practical task.

Cloze: read passage with words deleted and fill in the gaps.

Vocabulary tests.

Why Cloze?

Cloze was first developed by Taylor (1953). It has been extensively researched both as a measure of comprehension skills and as a measure of readability (Bormuth 1966; further references in Klare 1984). It correlates very highly with other measures of reading comprehension. It is well established that the cloze procedure taps many levels of skill, including

- recognition of individual words
- using semantic and syntactic information within a sentence to predict a missing word.
- using the local context, semantic and syntactic, of other sentences to aid prediction.
- skimming to recap what has been read and being prepared to revise hypotheses about global meanings in the light of new information.
- scanning ahead for cues to aid prediction.

Unlike other comprehension tests, cloze tests are relatively easy to construct (Bormuth 1975). They are extremely reliable over repeated testing and scores are relatively robust for variable exposure times. It has been shown that simple 'correct word or not' scoring is as effective at validly distinguishing between subjects as more sophisticated scoring, where synonyms for deleted words are accepted as correct or where cues for initial letter and/or word length are given or where the missing word is selected from a list of alternatives (Miller and Coleman 1967).

Cloze can also be used as a measure of the readability of texts. In that case texts are assessed using a population of readers with known levels of reading skill. Cloze based measures have been shown to correlate very highly with other readability measures and to give more consistent rankings of text difficulty than traditional tests of reading comprehension (Bormuth op.cit.). However, using cloze as a measure of readability is a complex and expensive procedure and, in practice, it is far simpler to use other measures, some of which are available as software packages.

The Reading Tests

We have had to select our own test materials since there are no standardised tests suitable for group testing the reading skills of adults (Pumfrey 1985) although there is one vocabulary scale with UK norms (Raven, Court and Raven 1994). We have included a vocabulary test in our questionnaire but used one more fitting to our purposes. For details, see *Sources* below.

The passages

We have selected three passages at three levels of difficulty. The first (and easiest passage) should be comprehended by any adult with basic functional literacy. The second passage requires more ability, such as, reading middle-brow newspapers and novels. The third passage is more difficult; it is a fairly typical example of academic prose, though not by any means the most difficult.

The difficulty levels of the passages have been assessed and compared using a measure of readability, the Flesch Reading Ease Score. Readability scores, such as the Flesch, are reliable *predictors* of the difficulty of text for readers.

Comprehensibility of text may also usefully be distinguished from the 'learnability' of text. Instructional materials include many features to encourage effective learning. These features may be regarded as 'add-ons' since they are extra to the main subject-

matter discourse (see Rowntree 1990 for an overview). Table 3 summarises these distinctions between readability, comprehensibility and learnability.

Table 3

Readability:

Measures of syntactic and semantic complexity that predict the difficulty of text comprehension.

Comprehensibility:

Accounts of logical/causal/narrative coherence, global and local.

Learnability:

Assessment of pedagogical effectiveness of instructional texts (comprehensibility plus use of activities, self-assessment, metacommentary on study strategies).

As noted above, in addition to the three cloze passages, we have also included a vocabulary test. From many studies it is known that vocabulary is highly correlated with measures of general intelligence. It is also a major factor in readability measures. Previous OU work has shown vocabulary to be a good predictor of academic success (Woodley and McIntosh 1980).

The survey instrument with accompanying letter and instructions is shown in the Appendix.

Sources.

After deciding that cloze procedure suited our purpose, we set about selecting appropriate passages. We reviewed the literature on adult literacy, came across the work of ALBSU (the Adult Literacy and Basic Skills Unit) and discovered that ALBSU had produced screening materials for reading skills in cloze form. It seemed sensible to use their materials to allow for comparisons across the UK adult population.

Passages 1 and 2 are from ALBSU. Passage 1 is part of a basic skills screening test used extensively in FE colleges (ALBSU 1993). Scores between 40% and 60% are at ALBSU Standards Level 1, broadly equivalent to GNVQ Communication Skills Level 1, and National Curriculum English Levels 4-5.

Passage 2 is from an ALBSU handbook on Cloze procedure, with examples (Vaughan 1989). According to the author "If a learner can satisfactorily complete one of these passages... they should be able to read the popular national newspapers and much of the reading that is involved in normal everyday life".

No ALBSU materials were available at the higher level of difficulty needed for Passage 3, so we made our own choice of fairly representative academic prose and then developed a cloze version. Passage 3 is based on an extract from a review of an academic book which appeared in the *Times Higher Education Supplement* (Turner 1994).

The vocabulary test is taken from a series of tests constructed by the late Hunter Diack. The test gives an estimate of vocabulary size. For an account of the test's rationale and construction, see Diack 1975.

We are most grateful to all the copyright holders for their permissions to use these materials in our survey.

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Appendix: The Survey Instrument

IET Survey of Reading Skills & Readability

Dear Student,

As part of the OU's efforts to improve the quality of its courses, we are carrying out a survey of the readability of our texts and the reading skills of OU students. We would be most grateful if you would take part in this exercise.

To help assess reading skills, we are using a technique known as the *Cloze* procedure. Each of the passages that you are asked to read has had words deleted. As you read through the passages you are asked to write down what you think are the missing words. The passages are of increasing difficulty, and the third passage is especially difficult. Do have a go at it, but do not feel inadequate if its overall sense eludes you.

There is also a short task that gives a rough estimate of the size of your vocabulary. We've included a simple scoring procedure for your interest.

The whole exercise should take about 30 to 45 minutes, although some students will take less time than that, and others may take more. There is no time limit; please work at your own pace.

Please note: your performance on the tasks set is strictly confidential to our survey. Results are published only in the form of statistical summaries over large samples.

Thank you very much for your cooperation. We wish you all success with your studies.

Yours sincerely,

The Text & Readers Programme
Institute of Educational Technology
Walton Hall

This survey is not concerned with individual admissions, selection or assessment, and is not meant for clinical or diagnostic purposes.

INSTRUCTIONS

Here's what we would like you to do:

1. *Find a place where you will be undisturbed.*
2. *Start with Part A, and work through it as directed.*
3. *Next work through Part B as directed.*
4. *When finished, please return the completed form to Walton Hall.*
   The envelope is re-usable and a prepaid address label is provided.

For this survey to be valid, it is vital for you to do the exercises unaided

Part A

For office use only
Please do not write in this column

CARD 1 (1)

(2-5)

(6)

IET Survey of Reading Skills

(7-14)

Instructions

(15-17)

In this survey are passages in which words have been left out at regular intervals, leaving blank spaces. Your task is to fill in each blank space with the word that you think fits best. Try this out, using this practice passage.

Only one word has _____ left out each time _____ this is indicated by a continuous line. All the lines _____ of equal length, so they _____ no clue as to the _____ of the missing word. Spelling is _____ important, as long as it _____ clear what the word _____ that you intended to _____ in the gap.

If at _____ you can't think of a _____ to put in the gap, read on and _____ back to it later. You may also go back and change your choices.

Now check your answers against the complete passage:

Only one word has been left out each time and this is indicated by a continuous line. All the lines are of equal length, so that they give no clue as to the length of the missing word. Spelling is not important, as long as it is clear what the word was that you intended to put in the gap.
If at first you can't think of a word to put in the gap, read on and go back to it later. You may also go back and change your choices.

Don't worry if some of the words you chose are different from our answers. The important thing is that you understand what is being said.

Note: the passages are of increasing difficulty, and the third passage is quite difficult. There is no time limit for the task. You should take about half an hour to finish. When ready please begin.

First passage:

For office use only
Please do not write in this column

Safe as houses

We think of our home as a safe place to be, and are more worried when someone goes out of the house than when they stay at home. In fact _____ people die from accidents in _____ home every year than are _____ on the road or at work. _____ are the causes of these _____ in the home? Many people may _____ of fire as the greatest _____, but in fact more people _____ from falling than from any _____ cause. Tragic accidents, some fatal _____ caused by children and adults _____, walking or falling through glass _____ and windows. Poisoning can also _____ illness or death. This may _____ from medicines or from household substances _____ as cleaning materials. Food _____ is also a common danger.

Statistics _____ that most accidents happen on Mondays _____ at weekends. People are at work _____ now and have more leisure _____. They therefore spend more time _____ home. This has led to _____ increase in the number of _____ in the home. The two _____ vulnerable groups of people _____ young children (especially pre-school _____) and the elderly. These groups _____ more time in the home _____, for example, older children who _____ at school, or adults _____ are out at work during the _____. The elderly are weaker and _____ slower reactions. Young children are _____ aware of the dangers in _____ home, and are dependent on _____ carers being aware of dangerous _____.

(18)
(19) (20)
(21) (22)
(23) (24)
(25) (26)
(27) (28)
(29) (30)
(31) (32)
(33)
(34) (35)
(36) (37)
(38) (39)
(40) (41)
(42) (43)
(44) (45)
(46) (47)
(48) (49)
(50) (51)
(52) (53)

This passage from 'Assessing Reading and Maths' is reproduced by kind permission of ALBSU, The Adult Literacy & Basic Skills Unit.

Second passage:

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Travel and tourism

Work within the tourist industry involves planning and arranging activities for tourists. These holidays have to be sold and a full back-up service provided, to meet the customers' needs.

Besides holiday travel, business _____ continues to grow each _____. (54) (55)

This is an important _____ of income. Air fares _____ getting lower and (56) (57)

this _____ led to much more _____ travel than ever before. (58) (59)

The _____ industry may seem glamorous _____ exciting, but the reality (60) (61)

_____ rather different. There are _____ in exotic holiday spots, (62) (63)

_____ there are many more involving routine tasks. In this _____ staff (64) (65)

are needed for clerical _____ sales work in offices _____ travel agencies. (66) (67)

Junior staff may _____ reductions on holidays _____ occasionally have (68) (69)

training trips _____. Mainly it is _____ management who go overseas on (70) (71)

_____ trips. Couriers and representatives _____ abroad, but many of (72) (73)

_____ are employed on a temporary _____. If you want to _____ as (74) (75) (76)

a courier or _____, being able to speak _____ local language will be (77) (78)

CARD 2 2(1)

_____. In some other jobs _____ language may be useful, _____ (2) (3) (4)

not essential. In many _____ a language will not _____ used at all. (5) (6)

Tour _____ arrange the transport, accommodation _____ leisure (7) (8)

activities that make _____ a holiday package. Travel _____ act like a (9) (10)

link _____ the client and the providers, _____ tour operators. (11) (12)

Tourist boards promote _____ in their country. They _____ research into (13) (14)

current needs and future trends in tourism.

Guides usually have a specialised knowledge of one area and provide a service to visitors. They may take guided tours round an area or an important building such as a cathedral or stately home.

This passage from 'Assessing Reading' by Judy Vaughan is reproduced by kind permission of ALBSU, The Adult Literacy & Basic Skills Unit.

Third passage:

Rethinking university teaching

The reduction of the unit of resource for _____ in institutions of higher _____ turns our attention to _____ possibility of increasing resource-based _____. The opportunities which educational _____ offers for maintaining quality _____ higher education look ever _____ attractive. A book which _____ the possibilities of different _____, and sets out a _____ within which media can _____ evaluated, is indeed timely. Diana Laurillard _____ this in her book, *Rethinking University Teaching*, _____ eulogy, and without suggesting _____ technology offers a panacea. _____ book which argues elegantly _____ a sound basis in _____ research into student learning _____ welcome. She gives concrete _____ of good practice, without _____ letting her book become _____ "how to do it" _____. This book will offer _____ to anybody who is _____ with the development of _____ centres in higher education.

_____ book is in three _____. In the first, Laurillard _____ out to characterise the _____ which are essential to _____ in a university. Academic _____ (and the qualifying adjective _____ important) is presented as _____ conversation. There is a _____ of exposition, in which _____ teacher sets out his _____ her description of the _____. Students are then encouraged _____ set out their descriptions _____ the world. On the _____ that the two differ, _____ teacher then identifies tasks _____ the student is to _____, selected to highlight the _____ between the two descriptions, _____ to draw attention to _____ weaknesses of the student's _____. The teacher and student _____ reformulate their descriptions in _____ light of the discourse, _____ the process can continue.

For office use only
Please do not write in this column

(15)
(16) (17)
(18) (19)
(20) (21)
(22) (23) (24)
(25) (26)
(27)
(28) (29)
(30) (31)
(32) (33)
(34) (35) (36)
(37) (38)
(39)
(40) (41) (42)
(43) (44)
(45) (46)
(47) (48) (49)
(50) (51)
(52) (53)
(54) (55) (56)
(57) (58)
(59) (60)
(61) (62)
(63) (64)

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Part B

A rough estimate of the size of your vocabulary

Start at word numbered (2), read the words in order. Put a ✓ in the box for each word you know.
***For each of the last five** of your ticked words, please show that you do know its meaning.*
To do this you give a definition, show in a sentence how it is used, or make a small sketch.

Card 3

application	☐	(2)	almoner	☐	(22)
benefit	☐	(3)	bibliography	☐	(23)
crater	☐	(4)	cognate	☐	(24)
demonstration	☐	(5)	daguerrotype	☐	(25)
factor	☐	(6)	homonym	☐	(26)
hitch	☐	(7)	largesse	☐	(27)
jury	☐	(8)	malign	☐	(28)
loiter	☐	(9)	minuend	☐	(29)
mildew	☐	(10)	neap	☐	(30)
ordeal	☐	(11)	penultimate	☐	(31)
abdicate	☐	(12)	avatar	☐	(32)
catastrophe	☐	(13)	cheval-glass	☐	(33)
impresario	☐	(14)	demiurge	☐	(34)
irreparable	☐	(15)	farandole	☐	(35)
linear	☐	(16)	homocentric	☐	(36)
mercantile	☐	(17)	kaolin	☐	(37)
nitrogen	☐	(18)	leat	☐	(38)
officious	☐	(19)	llanero	☐	(39)
perspective	☐	(20)	marram	☐	(40)
radiant	☐	(21)	onager	☐	(41)

List the last five words you ticked:

WORD

And for each one give its meaning:

MEANING

*A rough estimate of vocabulary size is given by **the number of ticks plus 10 multiplied by 600.***
For example, if you have 20 ticks, vocabulary size is: (20 + 10) X 600 = 30 X 600 = 18000 words.

This word-list is adapted from 'Standard Literacy Tests' by Hunter Diack.
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